

APPENDIX A

UNIVERSITY OF MICHIGAN TRAINING PACKAGE
FOR **OVERHEAD** OR **GANTRY** CRANES

CRANE AND HOIST TRAINING INSTRUCTIONS

Training Procedures

Each department using cranes or hoists will appoint at least one designated trainer to train employees to operate them. The trainer must be a supervisor or other person that is knowledgeable in the operation of cranes, hoists and slings in their unit and is familiar with all safety principles applicable to their operation. Trainers for **overhead** or **gantry** (“Part 18”) cranes must have an Overhead and Gantry Crane Permit issued from EHS.

*NOTE: Trainers for equipment other than **overhead** or **gantry** (“Part 18”) cranes, e.g., underhung cranes, monorail cranes or other cranes, hoists, slings or chain falls cranes do not need a permit for that equipment and should follow the training requirements noted in [Appendix B](#), rather than the items noted in this Appendix.*

Your department must have the written manufactures’ guide and/or training videos for the specific equipment in the department. The training process must be conducted before the employee is allowed to operate the equipment.

The training for **overhead** or **gantry** cranes must consist of:

1. Instruction such as a discussion (*or written material*) based on the MIOSHA standard and the specific equipment operation.
2. Review of the [daily inspection checklist](#), which should also be posted in the workplace.
3. At the conclusion of the training, the employee(s) must be administered a [written test](#) to demonstrate the knowledge and ability of an employee before authorizing him or her to operate a crane.

- * NOTE: Trainers can elect to use testing materials provided by the equipment manufacturer (*preferred*), or the written test included in this Appendix or the written test included in the training booklet “*Indoor Cranes – Safe Lifting Operations*” that accompanies the training video with the same title.

This video can be borrowed from EHS by calling 7-1143.

4. After completion of the written exam, each employee must undergo a performance test to determine that the employee can operate the assigned crane or cranes through the functions necessary to perform the required task.

Include any other pertinent information you think is important. You may also contact EHS at 7-1143 with technical questions.

Recordkeeping

After the training, the designated trainer of the employee operating an overhead or gantry crane will complete the [Permitted Equipment Operator’s Request Form](#).

The designated trainer will send the permitted equipment operator’s request form to EHS along with the written and performance test. EHS will evaluate the packet and issue a permit or contact the department for missing/additional requirements. Training and permitting information will be maintained at EHS and the department can keep written documentation of the name of the trainee, dates of the training, and the equipment trained on, if they wish.

Renewal Permits

Overhead or **gantry** permits must be renewed every three years, by filling out the [Permitted Equipment Operator’s Renewal Form](#) and reminders will be sent by EHS. Contact the University Medical Surveillance Coordinator at 615-2140 for additional information.

Refresher Training

Refresher training for any type of crane or hoist is required of the operator only **IF** the operator is observed or reported:

- performing unsafe operation,
- involved in an accident or near-miss incident,
- evaluation indicates need,
- different type of equipment is introduced, or
- workplace conditions change.

Permits

Overhead or **gantry** crane operators must carry the permit with them at all times when operating this equipment.

Crane and Hoist Equipment Maintenance and Testing

The University will only purchase crane and hoist equipment that meets the specifications listed in MIOSHA Safety Standards, [Part 18](#) and [Part 20](#). EHS will conduct inspections for all powered hoists and cranes on campus unless a department elects to have their own formal inspection program.

It is the responsibility of each department to assure their cranes and hoists are in proper working order and to follow manufacturers' specifications with respect to inspection and maintenance.

Administrative questions pertaining to the tracking system and issuance of overhead or gantry crane permits may be directed to Annette Green (5-2140) or by e-mail at annette@umich.edu.

Technical questions regarding this program may be addressed to EHS at (7-1143).

CRANE & HOIST WRITTEN TEST
OVERHEAD AND GANTRY CRANES
(mandatory)

Employee Name: _____

Department: _____

Equipment Specification (manufacturer, type & load): _____

Location of Equipment: _____

- 1) **A trained operator may lift a load at three (3) times the rated capacity of the crane.**
 - a) True
 - b) False

- 2) **What should an operator do when given the emergency stop signal by another worker?**

- 3) **It is OK to work under a suspended load as long as the operator is there.**
 - a) True
 - b) False

- 4) **Use the limit switch to stop the hoist motion.**
 - a) True
 - b) False

- 5) **It is OK for the load to contact an obstacle.**
 - a) True
 - b) False

- 6) **When should an inspection of the crane and pendant control be conducted?**
 - a) Before each day's use of the equipment
 - b) Weekly
 - c) Monthly

- 7) **Do not operate the hoist if the rope is not seated in drum or sheave grooves.**
 - a) True
 - b) False

- 8) **What should you consider before planning for a lift?**
 - a) The crane's load capacity
 - b) Potential hazards in the area
 - c) Personnel who are in the area
 - d) Where you plan to set the load
 - e) All of the above

- 9) **A lift can be made with a kinked or twisted rope.**
- a) True
 - b) False
- 10) **If the crane fails the inspection, you should ...**
- a) Use caution when operating the crane
 - b) Not use the crane until corrections or repairs are made
 - c) Make a note of it before using the crane
- 11) **When moving a load, you should ...**
- a) Keep both hands on the pendant control
 - b) Avoid swinging the load
 - c) Face the load
 - d) All of the above
 - e) Only B and C
- 12) **When setting a load, you should ...**
- a) Place the bridge and trolley to the left of where you will set the load
 - b) Swing the load into place
 - c) Quickly set the load down
 - d) Lower the hook so the sling can be easily removed from the hook.
- 13) **Tying knots in a sling can increase its capacity.**
- a) True
 - b) False
- 14) **As a crane operator, you are responsible for your safety and your co-workers.**
- a) True
 - b) False

Answer Key:

1. False
2. Stop the movement
3. False
4. False (use the controls to stop the hoist, the limit switch is a safety stop)
5. False
6. A
7. True
8. E
9. False
10. B
11. D
12. D
13. B
14. A

**EMPLOYEE PERFORMANCE TEST
OVERHEAD AND GANTRY CRANES
(mandatory)**

Employee: _____

Date: _____

Trainer: _____

Equipment used during the test: _____

Instructions to Trainer:

Demonstrate how to do a daily inspection. Have a load reading for lifting and demonstrate how to properly lift the load and move it to another location. Then have the employee take the controls and perform a daily inspection and lift the load in the same manner as demonstrated.

Rate the employee on how well he/she performs the crane inspection and operates the crane in lifting and moving the load:

E – excellent – no mistakes were made

G – good – only minor mistakes were made, or employee recognized and corrected on own

F – fail – employee made serious mistakes that could result in injury

Categories to observe and rate:

Rating

Section I – Crane Inspection

Ability to identify items inspected and to explain what they are looking for _____

Section II – Basic Control Skills

Ability to use controls accurately _____

Lifting and handling load properly and accurately _____

Operating in a safe manner, aware of people and obstacles _____

Overall Performance rating: _____

Signature of Trainer: _____